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TP 1624

Marine Casualty Investigations

Enquêtes sur les accidents maritimes

Investigation Report to the Minister pursuant to sections 542 or 545 of the Canada Shipping Act

Rapport d'investigation au Ministre conformément aux articles 542 ou 545 de la Loi sur la marine marchande du Canada

Canada

Ce rapport est aussi disponible en français.

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES ATTENDING THE LOSS OF THE CANADIAN LOBSTER FISHING VESSELS "MARGARET AND ROBERT" AND "BRANDI & JOEY" AND THE SWAMPING OF THE "BONNIE'S BOY RAY" DURING HEAVY WEATHER OFF YARMOUTH, N.S., NOVEMBER 24, 1986.

REPORT No. 479

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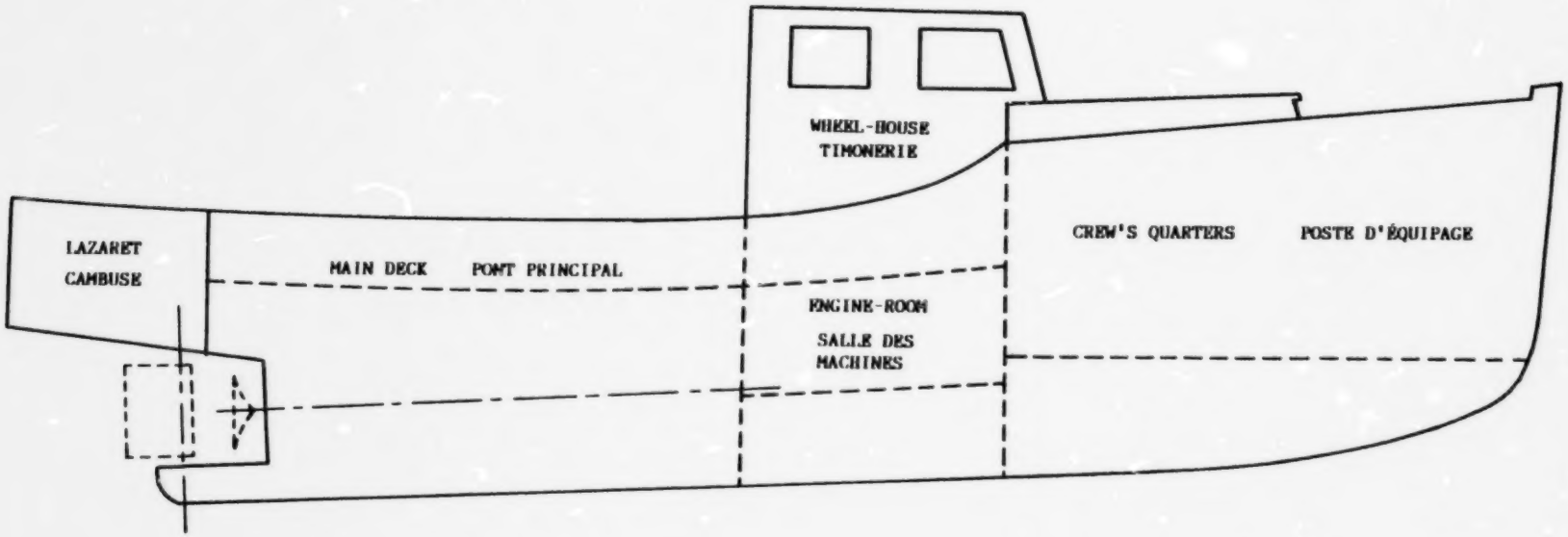


TYPICAL CAPE ISLAND FISHING VESSEL

BATEAU DE PÊCHE TYPIQUE DE TYPE 'CAPE ISLAND'

PREAMBLE

On the first day of the 1987 lobster season for Fishing Area 34, south-western Nova Scotia, four vessels were lost in adverse weather conditions. These losses were the subject of considerable media comment. This report covers the loss of three of the vessels and the fourth, which involved loss of life, is covered separately.

Although the three casualties occurred within a period of approximately 75 minutes, the description and movements of each vessel will be recorded separately.

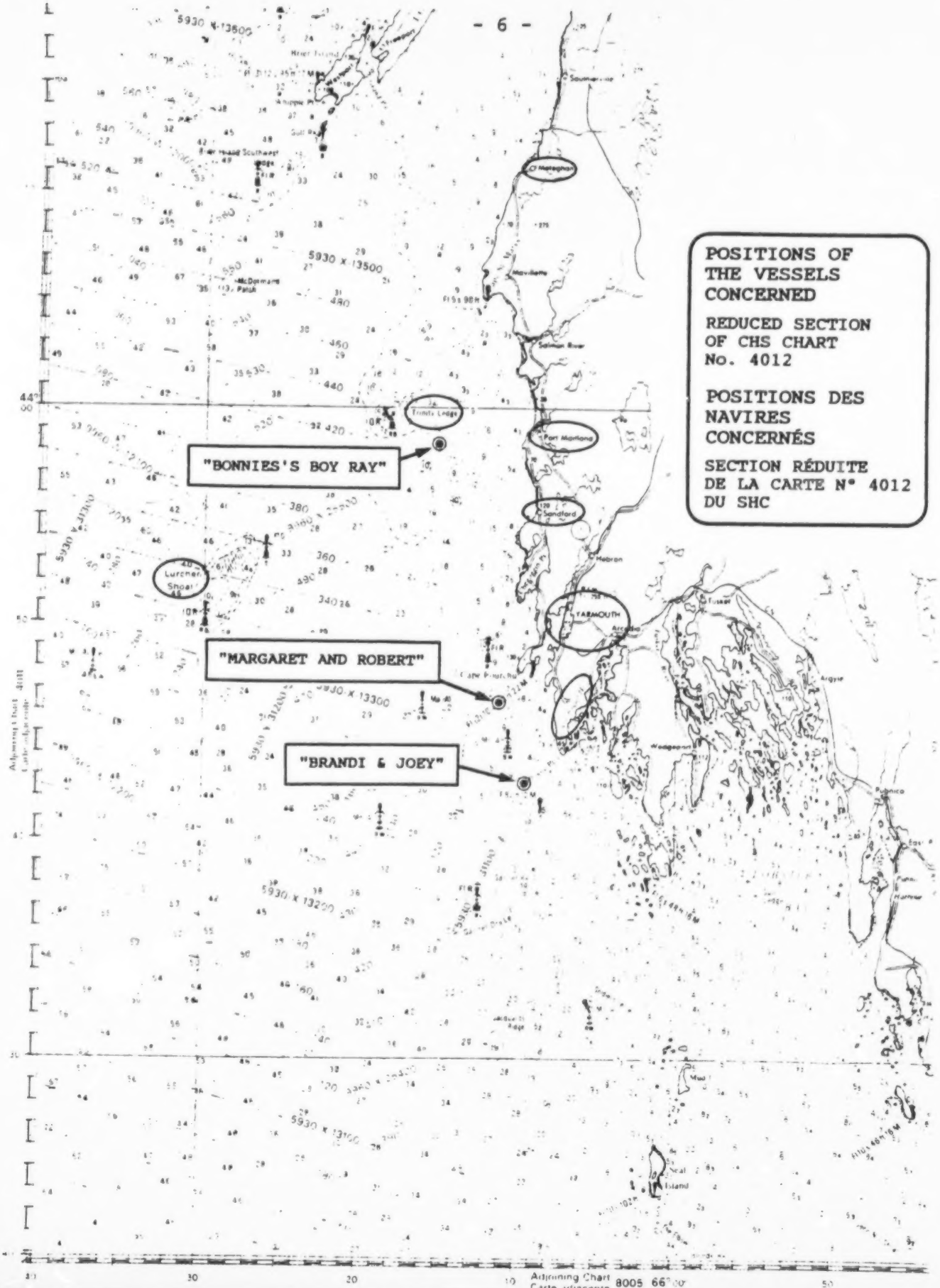
NOTE: 1. All times in this report are expressed in Atlantic Standard Time (UTC minus four hours).

2. A glossary of terms and abbreviations can be found following the General Findings in this report.

CHAPTER 2

List of Fishing Vessel Casualties

1. "MARGARET AND ROBERT"
2. "BRANDI & JOEY"
3. "BONNIE'S BOY RAY"


"BONNIES'S BOY RAY"
"MARGARET AND ROBERT"
"BRANDI & JOEY"
POSITIONS OF THE VESSELS CONCERNED
REDUCED SECTION OF CHS CHART No. 4012
POSITIONS DES NAVIRES CONCERNÉS
SECTION RÉDUITE DE LA CARTE N° 4012 DU SHC
Trinity Ledge
Port Maitland
Sandford
YARMOUTH
Lurcher Shoal
Adjoining Chart
Carte adjacente 8005

REPORT OF INVESTIGATIONS

1. LOSS OF "MARGARET AND ROBERT" OFF YARMOUTH, N.S., NOVEMBER 24, 1986.

Particulars of Vessel

Name	"MARGARET AND ROBERT"
Official Number	346475
Port of Registry	Yarmouth, N.S.
Call Sign	VC9811
Gross Tonnage	26.40
Net Tonnage	14.24
Length	12.16 m
Breadth	5.05 m
Depth	1.71 m
Draught	F: 0.30 m A: 1.52 m
Type	Wooden, Cape Island lobster boat
Built	1973, Cape St. Mary, N.S.
Propulsion	One, 2 stroke single acting GM diesel engine, 225 b.h.p., driving a single, fixed-pitch propeller
Crew	4
Owner	M & R Fisheries Ltd. Yarmouth County, Nova Scotia

Navigating Equipment

The following navigating equipment was reported to be on board and in good working order:

Radar

Echo Sounder

Loran C

VHF

Magnetic Compass

Autopilot

Vessel Description

This was a small wooden fishing vessel of open construction built according to the approved specifications of the Cape Islander design.

The vessel was surveyed by the Ship Safety Branch of the Canadian Coast Guard in February 1984 and was issued a SIC 29 which was valid for one year.

A further inspection was carried out September 26, 1986, and a short-termed SIC 29 was issued with a validity of 30 days. Attached to the SIC 29 was a SI 7 enumerating a list of deficiencies which required remedial action prior to the issuance of an extension to the SIC 29. This extension was not granted and, therefore, during the weeks which elapsed between October 26, 1986 and November 24, 1986, the vessel was engaged in commercial fishing without a valid certificate.

Background

The "MARGARET AND ROBERT" was heading for Lurcher Shoal, N.S. from Yarmouth, N.S. to set lobster traps at the onset of a new season.

Shortly after clearing Yarmouth Harbour, an initial slight port list increased progressively until water was being shipped over the gunwale.

The lobster traps broke free and, although the vessel returned to the upright position, only the stem and house-top were above water.

After losing their liferaft, the crew were successfully rescued from the house-top by the fishing vessel "LEANNA" and

transported to Yarmouth.

The vessel reportedly sank at 0754, November 24, 1986, in approximate position 43°46'30"N, 66°11'30"W. At the time of sinking there was no apparent pollution and no injuries were sustained. However, 3 weeks later, during confirmation of the position of the vessel, a small slick of fuel oil was observed.

The vessel was valued at approximately $55,000.

Narrative

The "MARGARET AND ROBERT" departed from Yarmouth, N.S., at 0645, November 24, 1986, bound for Lurcher Shoal area some 12 miles from Yarmouth. On board was a crew of 4 and the vessel carried 180 wooden lobster traps each weighing approximately 27 kg, 9 anchors each weighing approximately 14 kg and 60 floats. The departure draught was reported to be 0.30 m forward and 1.52 m aft and the scuppers were submerged. With a greater concentration of weight on the port side, the vessel departed with a slight port list.

The weather at the time of departure was reported to be: wind southerly at 30 knots, visibility 1.5 miles in rain and rough seas.

Once the harbour was cleared, a course of west-southwest magnetic was maintained with the vessel in the hand steering mode and proceeding at approximately 6 knots.

The vessel was rolling easily with the wind on the port side but soon after clearing East Cape, the list became more pronounced. Initially, none of the cargo shifted although it had not been secured. However, as the list increased, some of the crew went to shift the traps to attempt to reduce the list. At this time, the bilge alarm activated indicating that either the pumps were unable to cope with the water ingress or that they had ceased to function. The port gunwale was now submerged and the vessel listed heavily as water poured in. The operator grabbed the VHF R/T and broadcast on channel 8 that he was listing badly and for any boat to respond and stand by his vessel. He then gave a position but did not prefix his broadcast with MAYDAY. At this time, the traps jettisoned themselves and the vessel came to the upright position but only the stem and the housetop remained above water.

Two crew members rushed to the bow and two, including

the operator, clambered on top of the wheel-house.

Strangely and, as it transpired, fortuitously, the spotlight, which had been on throughout, remained burning.

The liferaft, which was in a cradle atop the housework, was cut loose and thrown overboard. However, the painter had not been previously secured and the liferaft was lost. One crew member attempted to gaff the painter of the liferaft and in so doing, he fell into the water. He grabbed a fender and was hauled back to the house-top.

Some 20 minutes later, the fishing vessel "LEANNA" saw the spotlight burning and upon investigation, discovered the plight of those aboard the "MARGARET AND ROBERT". This fact was reported to CGRS Yarmouth (VAU) by the "LEANNA" at 0727 on VHF R/T, channel 16, the International VHF distress safety and calling frequency.

The crew of the "LEANNA" rescued the crew of the "MARGARET AND ROBERT" by throwing a lifejacket attached to a line and hauling each person in individually. The last man was hauled aboard the "LEANNA" at 0748 and VAU was advised accordingly.

The "MARGARET AND ROBERT" was subsequently confirmed to have sunk in 20 fathoms of water in position 43°46'31"N, 66°12'04"W and at that time, a small fuel oil slick was observed.

Analysis

1. Repair work

Between August 3 and September 21, 1985, the "MARGARET AND ROBERT" was laid up at Meteghan River. During that time, various repairs were carried out including replacement of the stempost, approximately 33 m of planking and a complete caulking of the hull. The planking consisted of 4 lengths of 4 m, 2 of 3.5 m, 1 of 4.5 m and 1 of 5 m. The majority of the replaced planking was adjacent to the stempost and also included some underwater hull sections. Following the repairs, the owner did not request a survey by the Ship Safety Branch of the Canadian Coast Guard as required by the Small Fishing Vessel Inspection Regulations. (See Annex I.)

During the period between February 1985 and September

1986, other than the time taken for repairs, the vessel was engaged in commercial fishing without a valid Coast Guard Inspection Certificate.

At the time of the latest inspection by the Ship Safety Branch of the Canadian Coast Guard, September 26, 1986, the following items were requested to be rectified prior to the issuance of an extension to the short-termed SIC 29 which expired October 26, 1986:

1. All lifejackets to be fitted with tape and whistle.

2. Fire extinguisher to be serviced.

3. Whistle to be permanently mounted on the life-jackets.

4. Extended spindles to be fitted to fuel oil shut-off valves.

5. Retro-reflective tape to be applied to lifebuoy.

Although the owner maintains that these deficiencies had been corrected, he failed to notify the Ship Safety Branch of the Canadian Coast Guard and therefore his SIC 29 was invalid when he put to sea November 24, 1986.

2. <u>Lobster trap stowage</u>

A tier of 36 traps was laid athwartships on the deck. At the forward end, 2 lines of traps with 6 traps in each and 3 traps high were stowed fore and aft. Then came a line of 8 traps, 5 high stowed fore and aft and a line of 8 traps, 6 high also fore and aft. Finally, at the stern a line of 5 traps, 4 high was stowed fore and aft. Only those traps at the stern were lashed. Each trap weighed approximately 27 kg (60 lb) for a total trap weight of approximately 5000 kg (10,800 lb).

In addition to the lobster traps, the vessel carried 9 anchors, each weighing approximately 14 kg (30 lb) and 50-60 floats. There were 500 L of fuel oil in a tank on the afterdeck and 680 L of fuel oil in each of the port and starboard fuel tanks adjacent to the engine. There would, therefore, be a total above-deck load of some 5,550 kg and 1,360 kg below deck. It was reported that there was a slight excess of weight on the port side of the vessel. With the scuppers submerged, the vessel is considered to have been overloaded.

3. Pumping arrangement

The vessel was equipped with 4 pumps with a total capacity of 7.45 L/s.

The main fire and bilge pump was the rotary type operated off the main engine and had a capacity of 3.03 L/s. A centrifugal pump with a capacity of 1.14 L/s was located aft of the engine and was operated off the battery system. These two pumps were apparently in continuous operation, able to draw from all spaces and were monitored by an alarm system. If the pumps failed or if they were unable to cope with the water ingressed, the alarm would activate.

A Jabsco pump with a capacity of 1.14 L/s was also operated off the battery but was only used if the primary pumps failed. It was capable of being started from the wheel-house.

There was also a portable Honda gasoline pump with a capacity of 2.14 L/s.

When the alarms did sound during the casualty, both the Jabsco and Honda pumps were started up but, by that time, water was being shipped over the gunwale and down-flooding into below-deck compartments.

4. Through-hull fitting

Two days preceding the casualty, the operator was installing a new bilge suction onto one of the pumps which was also used for general service and washdown purposes.

This particular pump had a through-hull fitting to a bronze valve and a short galvanized steel nipple was led from a rubber hose to the valve. During the course of this installation, the valve was subjected to an accidental blow from a wrench. Upon inspection by the owner, there was no visible damage to the valve or its connections. The vessel had recently been out of the water and an inspection of 5 through-hull fittings revealed no sign of corrosion. There were 2 all bronze/brass fittings at the cooling pipes, a 7.6 cm seacock for the engine and a 2.5 cm seacock for each of the Jabsco and Honda pumps. The latter 3 comprised connections of dissimilar metals. Anodes were located at the hydraulic cooling line, at the cutlass bearing, at the buoy cage and 2 on the rudder.

5. **Deck scuppers**

At the juncture of the afterdeck and bulwarks, there were 3 evenly spaced 5 cm scupper holes on each side. These were fitted with brass screw-on plugs. They were all observed to be securely in place prior to loading the vessel the day before departure but were not visually checked immediately prior to departure. They were apparently still in place at the time of the casualty, allowing water on deck to remain on deck, thereby contributing to top weight and free-surface effect.

6. **Search and Rescue**

The operator of the fishing vessel "LEANNA" had his VHF radio tuned to channel 16 and therefore did not monitor the call for assistance transmitted from the "MARGARET AND ROBERT" on channel 8. In fact, there were no responses to the call. Apparently, fishing vessels operating for one particular fishing plant use channels 8 and 10 as their working channels.

Some 20 minutes after the call had been transmitted by the "MARGARET AND ROBERT", the operator of the "LEANNA" saw the spotlight of the former going 'off and on'- probably due to the effects created by the movement of the vessel between waves. He went over to investigate and discovered the plight of the crew of the "MARGARET AND ROBERT". The operator of the "LEANNA" was unable to effect a rescue using the lifebuoy as his crew had stowed lobster pots on top of it. So he secured a line to a lifejacket and was then able to throw it across to each crew member of the distressed vessel individually and haul them aboard his vessel. They were then taken to Yarmouth Bar where they transferred to a small boat and were taken to Yarmouth.

7. **Life-saving equipment**

Apart from being involved in commercial fishing without a valid SIC 29, the vessel reportedly carried the required equipment as specified in the Small Fishing Vessel Inspection Regulations. The performance of the equipment was as follows:

Lifejackets	At least 4 were carried but were not used during the abandonment as reportedly there was insufficient time

	to procure them from the starboard side before that side submerged. Three lifejackets were apparently recovered individually at a later date by other fishing vessels.
Liferaft	The liferaft was released from its cradle and thrown over the side before the painter had been secured. Consequently, it was lost but it too was later recovered. It had last been inspected October 7, 1986.
EPIRB	None required by regulation and none carried.
Immersion suits	None required by regulation and none carried.
Lifeboat	None required by regulation and none carried.
R/T	The vessel had one VHF R/T on which an urgent message was broadcast on channel 8. No urgency or distress prefix was used and there was no indication of any station receiving the message.

8. **Regulatory**

The Atlantic Fishing Regulations, 1985, made pursuant to the Fisheries Act state in part that "no person shall ... operate a vessel with lobster traps on board in a lobster fishing area .... during the 'close' season". (See Annex II) The "MARGARET AND ROBERT" departed from a port within the designated lobster fishing area, some 15 minutes prior to the official time of 0700, Monday, November 24, 1986 for the 1986-87 lobster fishing season. The officials of the Department of Fisheries and Oceans closely monitor this aspect of the regulations and as it transpired, several vessel operators were charged with leaving port before the official opening time.

9. **Personnel**

The operator of the "MARGARET AND ROBERT" does not hold a Fishing Master's certificate and is not required to by regulations. He has been fishing for 20 years including 16 years as skipper. He has owned the "MARGARET AND ROBERT" for 13 years.

Findings

The "MARGARET AND ROBERT" sank possibly due to an initial ingress of water below the waterline, subsequent downflooding and swamping.

The sinking of the vessel precluded her examination. Hence, in the absence of any evidence to the contrary, it would appear that the following factors contributed to the casualty:

- the unknown source of initial water entry;
- the vessel was deeply laden with lobster pots;
- the scuppers were knowingly plugged allowing water on deck to remain aboard and contribute to free-surface effect and top weight; and
- the vessel had 3 through-hull fittings of dissimilar metal construction which would be prone to corrosion due to electrolytic action.

Other Findings

A call for assistance sent on channel 8, instead of the designated channel 16, was not prefixed as either an urgency or a MAYDAY message, and was not received by either ship or shore station.

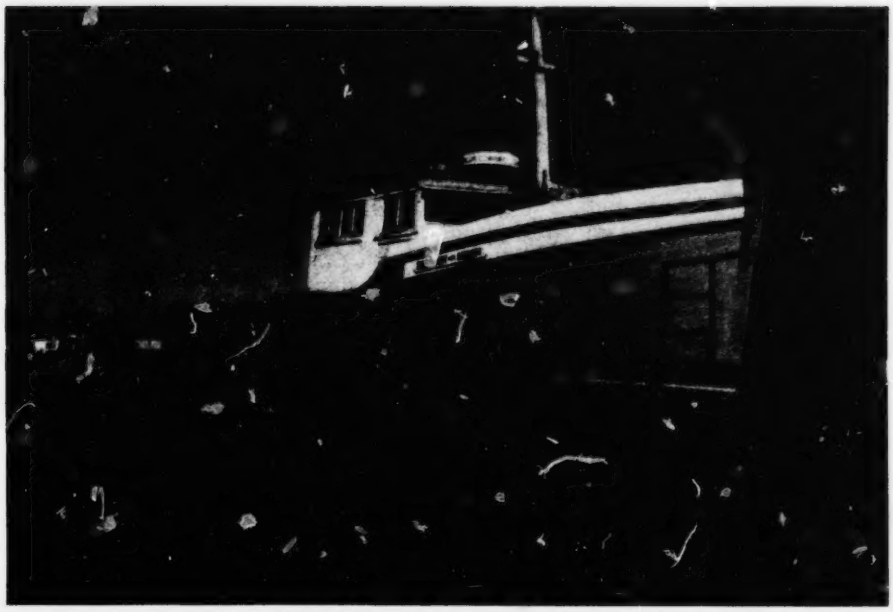
The chance arrival of the "LEANNA" was fortuitous under the circumstances.

A liferaft had been stowed on top of the wheel-house cabin without its painter being secured and consequently was lost when thrown overboard.

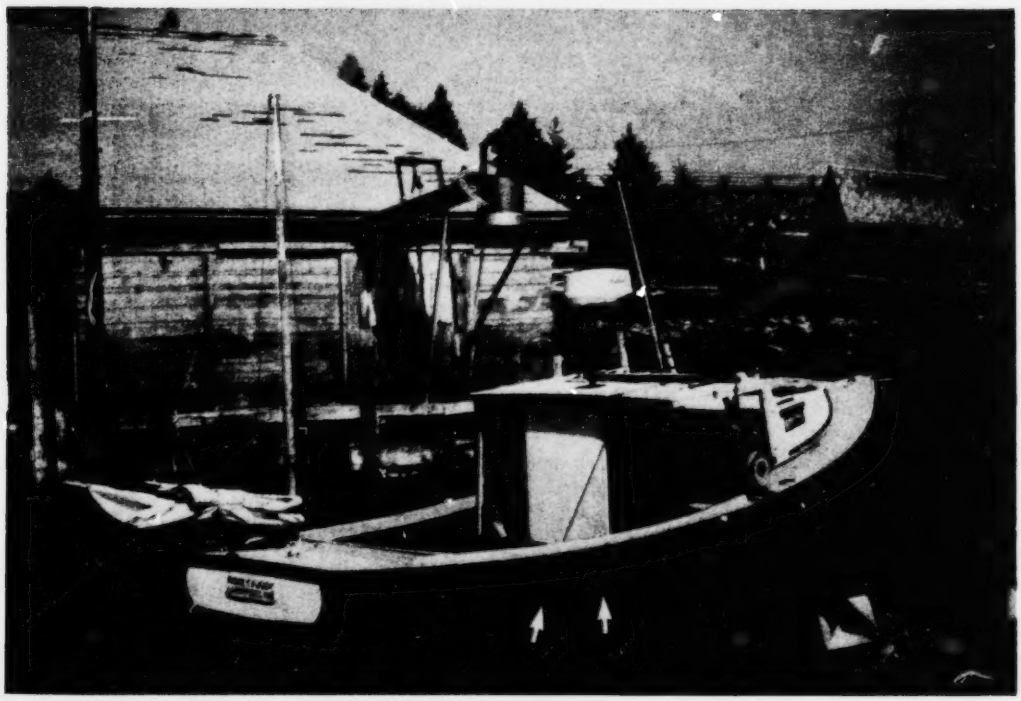
The skipper took his vessel to sea on a commercial venture without a valid Inspection Certificate.

The skipper failed to comply with the provisions of the

Atlantic Fishing Regulations, 1985 by departing from a port within the designated lobster fishing area prior to the regulatory time.



"MARGARET AND ROBERT"

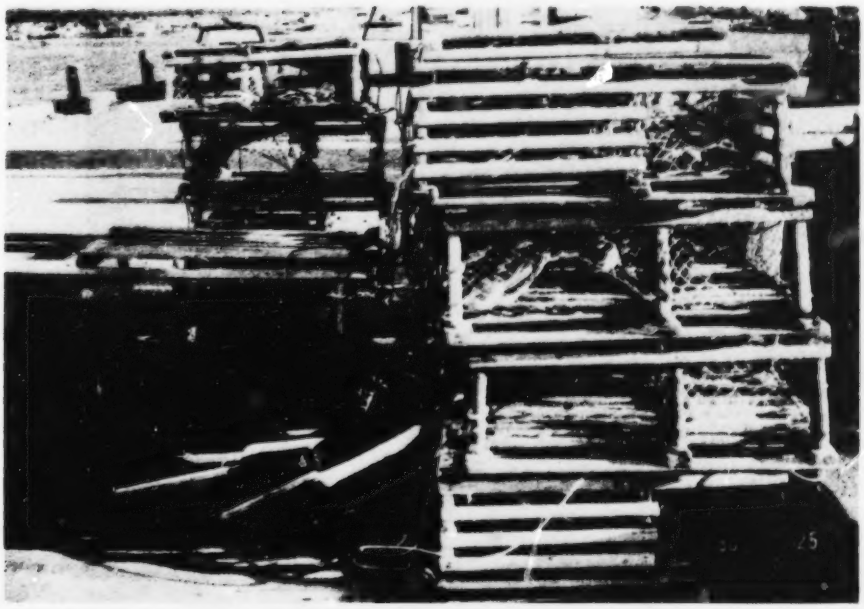


Typical scupper arrangements.
Note: Low clearance between scupper and waterline without a load of lobster traps.

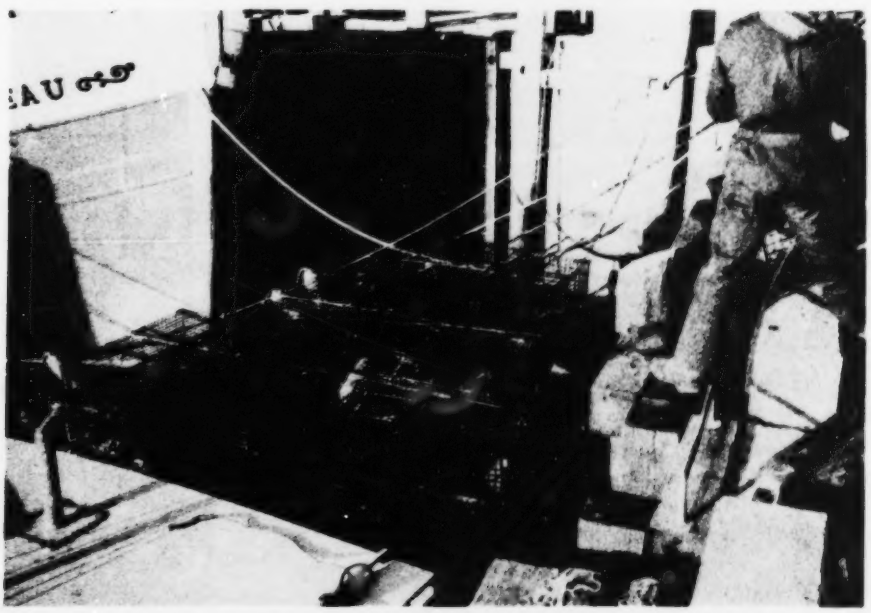
Arrangement typique de dalot.
Nota: Petit espace entre le dalot et la flottaison sans chargement de casiers à homards.

Courtesy of Maritime Museum of the Atlantic

Photo: Collection Maritime Museum of the Atlantic



Typical wooden lobster traps.
Casiers à homards typiques en bois.



Typical aluminum lobster traps.
Casiers à homards typiques en aluminium.

2. CAPSIZE AND SINKING OF "BRANDI & JOEY" OFF YARMOUTH, N.S., NOVEMBER 24, 1986.

Particulars of Vessel

Name	"BRANDI & JOEY"
Official Number	801219
Port of Registry	Yarmouth, N.S.
Call Sign	VY4933
Gross Tonnage	13.36
Net Tonnage	11.21
Length	9.54 m
Breadth	3.93 m
Depth	1.28 m
Draught	1.83 m aft
Type	Fibreglass, Cape Island lobster boat
Built	1981, Barrington Passage, N.S.
Propulsion	One, Cummins diesel engine, 152 b.h.p., driving a single, fixed-pitch propeller
Crew	4
Owner	W.R. Penney Yarmouth County, N.S.

Navigating Equipment

The following navigating equipment was reported to be on board and in good working order:

Radar

Echo Sounder

Loran C

VHF

Magnetic Compass

Description of Vessel

This was a small wooden fishing vessel of open construction built according to the approved specifications of the Cape Islander design.

As the vessel was less than 15 gross tons, she was not subject to inspection by the Ship Safety Branch of the Canadian Coast Guard.

Background

On November 24, 1986, "BRANDI & JOEY" was heading for the Ridge fishing grounds to set lobster traps at the onset of a new season.

Approximately 45 minutes after departure from Chebogue, N.S., the vessel started to ship water on the port side. A list developed and further water was shipped until the vessel capsized.

The crew abandoned the vessel into their liferaft and were subsequently rescued, unharmed, by another fishing vessel the "7 PENNEY'S".

The vessel, presumed to have sunk in position 43°42'33"N, 66°10'09"W, had an approximate value of $44,000. There were no injuries or pollution as a result of this casualty.

Narrative

The "BRANDI & JOEY" departed from Chebogue, N.S., at 0700, November 24, 1986, bound for Ridge fishing grounds some 3 miles west-south-west of Chebogue Point. On board was a crew of 4 and the vessel carried 105 wooden lobster traps each weighing approximately 29 kg, 8 trawl lines each weighing approximately 36 kg and 20 floats. The departure draught was reported to be 1.83 m aft and, reportedly, there was virtually no freeboard. There were 360 L (255 kg) of diesel oil in a tank on the port side. This weight had been

offset by stowing the 8 trawls (290 kg) on the starboard side.

The weather at the time of departure was reported to be: wind south-west at 25 knots, visibility 8 miles in rain and rough seas.

The vessel was proceeding at 7-8 knots until Chebogue Point light and bell buoy was passed. At this time, speed was reduced to 3-4 knots and the course was altered to west-south-west. With the wind and seas on the port bow, the vessel began shipping water on deck and soon developed a port list.

At approximately 0745, the crew were directed to clear away the liferaft which was stowed on top of the wheel-house. At the same time, the operator broadcast MAYDAY on VHF R/T channel 68 but there was no immediate response. Following this broadcast, the operator vacated the wheel-house through the starboard window directly into the water. Only the port bow of the vessel remained above water. He swam to the liferaft which was approximately 10 m away, held by its painter. After scrambling aboard, the painter was cut and the raft drifted away.

After approximately one hour in the liferaft, another fishing vessel was sighted and a flare was ignited. The operator of the "7 PENNEY'S" saw the flare and eventually rescued the survivors and picked up the liferaft, transporting all to Yarmouth.

When last seen, the bow of the "BRANDI & JOEY" was still above water. A later attempt to tow the vessel failed and, since no further sightings were made and no reports received by CGRS Yarmouth, the vessel was presumed to have sunk.

Analysis

1. Lobster trap stowage

All the traps were stowed fore and aft with 4 lines of 6 across the deck and 4 high which gave a height of approximately 2 m and which equalled the height of the wheel-house. The remaining traps were stowed at the stern. The floats were stowed below in the forward compartment, as were the trawl lines, but on the starboard side. None of the equipment was lashed. The total above-deck load was approximately 3560 kg.

2. **Pumping arrangement**

There were 2 automatic bilge pumps operated off the engine, each with a capacity of approximately 2 L/s. Suctions were sited at the after end of the engine and at the midship section of the vessel and these would be automatically activated if there was water in the bilge. The bilges were reported to have been pumped dry immediately prior to departure.

3. **Deck scuppers**

At the juncture of the main deck and bulwarks, there were two 5 cm scupper holes on each side at the low part of the deck sheer. These were fitted with plastic screw-on plugs. The plugs were reportedly secured prior to departure but they could not be seen from the wheel-house due to the presence of the lobster traps. Reports indicate that the plastic plugs are made up of two components with the cap glued onto the thread and that the caps have been known to fly off. This type has also been known to crack in cold weather and to break if screwed on too tight.

4. **Deck configuration**

There were 4 hatches on the deck and it was the practice of the skipper to leave open the one adjacent to the scuppers so that any normal amount of water shipped would enter the bilge and be cleared by the pumps. This particular hatch was open on this occasion.

5. **Through-hull fittings**

The "BRANDI & JOEY" had 2 through-hull fittings which were part of the engine cooling system. No valves or dissimilar metals were used. There was an anode on the keel and a second on the rudder.

6. **Search and Rescue**

No problems were experienced in launching the liferaft which had been stowed on top of the wheel-house with the painter secured. After inflation, each crew member jumped into the water and then scrambled aboard the liferaft. None were wearing lifejackets.

After broadcasting MAYDAY on VHF R/T channel 68, the frequency used by company vessels, the operator abandoned his vessel. VHF channel 16 is the international

distress and calling frequency. It transpired that a fishing vessel close ahead of the "BRANDI & JOEY" and later identified as the "RONNIE & JOSEPH II" had his VHF R/T turned on but the volume was turned down. Other vessels heard the broadcast but when they responded, there was no answer. The skipper of the "7 PENNEY'S" monitored part of the MAYDAY but could not read the name of the vessel nor its location. Fortunately, he passed close by the liferaft of the "BRANDI & JOEY" a short time later and saw their distress signal and subsequently effected a rescue of the crew.

7. Life-saving equipment

The vessel reportedly complied with the Small Fishing Vessel Inspection Regulations. The performance of the equipment was as follows:

Lifejackets	Four were carried plus three flotation vests. However, reports indicate that flooding occurred so quickly that there was only time to launch the liferaft. The lifejackets were stowed on top of the fuel tank on the port side.
Liferaft	Successfully launched and utilized during the abandonment.
EPIRB	None required by regulation and none carried.
Immersion suits	None required by regulation and none carried.
Lifeboat	None required by regulation and none carried.
R/T	The vessel carried a VHF R/T on which a MAYDAY was broadcast on channel 68. The MAYDAY was apparently received by other ship stations on this frequency, which is used extensively by local fishing vessels, but the "BRANDI & JOEY" had capsized before

receiving any answer.

One lifebuoy with line and a canister of pyrotechnics were also carried as per regulations.

8. **Personnel**

The operator of the "BRANDI & JOEY" does not hold a Fishing Master's certificate and is not required to by regulations. He has been fishing for 40 years including 26 years as an operator. He has owned the "BRANDI & JOEY" for 5 years.

Findings

The "BRANDI & JOEY" capsized and sank due to taking on water and downflooding. However, in the absence of any evidence to the contrary, it would appear that the following factors contributed to the casualty:

- the possibility of water entering through an open hatch to such an extent that the pumps were unable to cope;
- the vessel was deeply laden with lobster traps; and
- the scuppers were knowingly plugged allowing water on deck to remain aboard and contribute to the free-surface effect and top weight.

Other Findings

The distress message was not broadcast on VHF R/T channel 16, the designated international distress, safety and calling channel.

The fact that the MAYDAY, broadcast on channel 68, was heard in part by the "7 PENNEY'S", prompted the skipper of that vessel to be alert for possible survivors and in fact resulted in the rescue of the crew of the "BRANDI & JOEY".

"BRANDI & JOEY"

Typical load of lobster traps.
Note: Lazaret space not used for stowage.

Chargement typique de casiers à homards.
Nota: Espace dans la cambuse non utilisé pour arrimage.

Courtesy of Maritime Museum of the Atlantic

Photo: Collection Maritime Museum of the Atlantic

3. FLOODING OF "BONNIE'S BOY RAY" OFF YARMOUTH, N.S., NOVEMBER 24, 1986.

Particulars of Vessel

Name	"BONNIE'S BOY RAY"
Official Number	368658
Port of Registry	Yarmouth, N.S.
Call Sign	VY2690
Gross Tonnage	14.90
Net Tonnage	13.40
Length	10.49 m
Breadth	4.33 m
Depth	1.55 m
Draught	1.52 m aft
Type	Wooden, Cape Island lobster boat
Built	1976, Pinkney Point, N.S.
Propulsion	One, John Deere 414 diesel engine, 125 b.h.p., driving a single, fixed-pitch propeller
Crew	3
Owner	G. Pitman Yarmouth County, N.S.

Navigating Equipment

The following navigating equipment was reported to be on board and in good working order:

Radar

Echo Sounder (2)

Loran C

VHF (2)

Magnetic Compass

Description of Vessel

This was a small wooden fishing vessel of open construction built according to the approved specifications of the Cape Islander design.

As the vessel was under 15 gross tons, she was not subject to inspection by the Ship Safety Branch of the Canadian Coast Guard.

Background

The "BONNIE'S BOY RAY" was heading for Trinity Ledge from Port Maitland, N.S., November 24, 1986, to set lobster traps at the onset of a new season.

Approximately 50 minutes after departure, the vessel started to ingress water below the waterline. As the vessel settled, seas were shipped and downflooding occurred. A MAYDAY was transmitted and the crew abandoned the vessel into a liferaft in approximate position 43°58'26"N, 66°15'14"W. They were subsequently rescued by the fishing vessel "KARLA AND BROTHERS" and the "BONNIE'S BOY RAY" was subsequently towed into Meteghan.

There were no injuries or pollution as a result of this casualty. It was reported that the vessel had an approximate value of $50,000 while the cost of repairs was estimated to be $22,000.

Narrative

The "BONNIE'S BOY RAY" departed from Port Maitland, N.S., at 0700, November 24, 1986, bound for Trinity Ledge, some 6 miles to the west, to set lobster traps. On board was a crew of 3 and the vessel carried 130 wooden lobster traps each weighing approximately 27 kg, 22 anchors each weighing approximately 14 kg and 46 buoys. The deepest draught was reported to be 1.5 m aft and the vessel apparently had a freeboard of 2.5 cm.

The weather at the time of departure was reported to be: wind south-easterly at 10 knots, 3 miles visibility in rain and slight seas. However after clearing the shelter of the harbour, the wind was south-easterly at 30 knots with rough seas. A course of south-west magnetic was being steered and the vessel was moving ahead at 5 knots.

Approximately 50 minutes after departure, one crew member heard gurgling and water rushing, in the region of the fan belt. The hatch to the engine compartment was lifted and the compartment was seen to be 3/4 flooded. Bilge pumps were immediately activated from the wheel-house but it was evident that these could not cope as the vessel began to settle bodily. Seas were shipped over the gunwale and downflooding occurred into an open hatch.

At 0800, a MAYDAY was transmitted on VHF R/T, channel 7, and then reportedly repeated on channel 16; the position of the vessel was ascertained by Loran C co-ordinates.

The fishing vessel "JONATHAN MARK" received the MAYDAY on channel 7 and relayed the information to VAU at 0802. A MAYDAY RELAY was broadcast by VAU at 0805 on channel 16.

Meanwhile aboard the "BONNIE'S BOY RAY", the liferaft had been successfully launched and the crew abandoned at approximately 0805. Two crew members wore lifejackets and one did not. The vessel had, by this time, immersed bodily to the gunwales and the liferaft painter was still secured to the vessel. The Loran C and VHF R/T were apparently still operable from 2 x 12V batteries and the operator made several trips back on board to check the vessel's position.

At approximately 0915, the fishing vessel "KARLA AND BROTHERS" arrived on the scene and she was joined soon after by the fishing vessel "CORINNE AND NANCY III".

At 0935, the line from the liferaft was cut and the liferaft drifted quickly down to the "KARLA AND BROTHERS" and this vessel effected a rescue of the crew. After landing the liferaft on her deck, the "KARLA AND BROTHERS" took the survivors to Sandford. The MAYDAY was cancelled at 1141.

CCGS "WESTPORT" eventually took the "BONNIE'S BOY RAY" in tow until she was relieved by the fishing vessel "GRAMPY'S GIRLS" which subsequently towed the vessel into Meteghan, arriving there at 1552, November 24.

Analysis

1. Lobster trap stowage

All the traps were stowed fore and aft with 4 lines of 7-8 across the deck and 4 high. The anchors were stowed forward of the wheel-house and amidships. There were 26 trawl lines stowed evenly on either side of the slaughterhouse. There were 26 floats in the slaughterhouse and 20 on deck. None of the equipment was lashed. There was a fuel tank containing 410 L of diesel oil sited on the fore and aft centreline at the after end of the wheel-house. The total above-deck load was approximately 5,000 kg.

2. Pumping arrangement

The vessel was equipped with 2.5 cm and 4 cm rotary-type pumps both of which were operated from the batteries. The smaller pump which had a suction at the after hatch, was in constant operation and the larger with a suction abaft the engine, was capable of being started from the wheel-house. Both pumps were in operation once the excessive amount of water was discovered but they were unable to cope with the continuing ingress. The bilges were reported to have been dry at the time of departure from Port Maitland.

3. Through-hull fitting

The vessel had one through-hull fitting forward of the engine which was the seacock for sanitary discharge. This consisted of a bronze valve with a nylon through pipe on one side. On the other was a galvanized nipple to which a rubber hose was clamped with 2 jubilee clips. The rubber hose was subsequently discovered separated from the nipple with the jubilee clips in the bilge. The skipper maintains that there was no sign of corrosion at the dissimilar metals. There were reportedly 8 anodes affixed to the vessel; 2 on the rudder, 2 at the stuffing box, 2 at the keel cooling system and 2 interior at the tail shaft.

4. Scuppers

At the juncture of the afterdeck and bulwarks, there were two 5 cm scupper holes on each side of the vessel. These were fitted with brass screw-on plugs which were reportedly secured at departure time. The forwardmost hatch of 4 was left open to facilitate drainage of any

water accumulation on deck.

5. **Search and Rescue**

The "JONATHAN MARK" monitored the original MAYDAY on VHF R/T channel 7, the channel used for direct communication by fishing vessels out of Port Maitland.

He advised CGRS Yarmouth at 0802 and a MAYDAY RELAY was broadcast at 0805. The original MAYDAY, reportedly transmitted also on channel 16, was not received on that channel by any shore or ship station. At 0815, Aurora aircraft MIL 105 from Greenwood, N.S., requested the position of the "BONNIE'S BOY RAY". This aircraft subsequently arrived on scene and conversed briefly with the operator of the "BONNIE'S BOY RAY" on VHF R/T channel 16. After transmitting a homing signal for rescue craft, the Aurora was released by RCC and returned to base.

At 0831, the tug "IRVING ELM" offered assistance despite the fact that she was towing a barge. This vessel was stood down at 0938.

At 0842, CCGS "WESTPORT" was advised of the situation and was given the position.

At 0857, the "KARLA AND BROTHERS" advised that she was 3 miles south-south-east of Trinity Ledge buoy and was proceeding to aid the distressed vessel.

At 0935, the "CORINNE AND NANCY III" advised that she was on scene and standing by awaiting the arrival of CCGS "WESTPORT" and that the "KARLA AND BROTHERS" had rescued the crew of the "BONNIE'S BOY RAY" from their liferaft.

The crew took to the liferaft shortly after 0800 and maintained a line between the liferaft and the "BONNIE'S BOY RAY". The operator of the "BONNIE'S BOY RAY" made several trips back to the wheel-house to check the position and relayed the updated information to VAU at 0816 and 0909 respectively. During these trips, the water was reported to be up to his waist. On the first such trip, the operator jettisoned about 12 of his lobster traps.

The operator later advised CCGS "WESTPORT" that he would accept any responsibility if CCGS "WESTPORT" would attempt to tow his vessel. At 1019, CCGS "WESTPORT" had

the "BONNIE'S BOY RAY" in tow and was heading for Cape St. Marys. At 1031, the "WESTPORT" advised VAU that she was unable to tow the distressed vessel. Apparently, the tow lead to the CCGS "WESTPORT" was such that when the strain was put on it, the "BONNIE'S BOY RAY" would be pulled under water. Most of the remaining traps were lost during this initial tow.

At 1141, VAU cancelled the MAYDAY indicating that the "BONNIE'S BOY RAY" was submerged. However, at 1147, the "GRAMPY'S GIRLS" advised VAU that she had the "BONNIE'S BOY RAY" in tow, although under difficult conditions, and was heading for Cape St. Marys. At 1552, the "GRAMPY'S GIRLS" advised VAU that the "BONNIE'S BOY RAY" was secured at Meteghan.

6. Life-saving equipment

The "BONNIE'S BOY RAY" reportedly carried the life-saving equipment as required by the Small Fishing Vessel Inspection Regulations. The performance of the equipment was as follows:

Lifejackets	Twelve were carried. Two crew members wore a lifejacket during the abandonment. The skipper did not wear one during his trips back and forth as he believed it would hamper his movements. He was aware that if he wanted one, it was handy.
Liferaft	A 6-man Beaufort liferaft was successfully launched and was the prime evacuation vehicle. It was last inspected in 1984, and consequently was not annually tested contrary to the requirements of Schedule XI Section 1 (3) of the Life Saving Equipment Regulations (See Annex III)
EPIRB	None required by regulation and none carried.
Immersion suits	None required by regulation and none carried.

Lifeboat	None required by regulation and none carried.
Lifebuoys	2 carried each with a 30 m line.
R/T	The vessel had 2 VHF R/Ts, one of which was constantly and successfully used during the rescue operation. The ability for the on-going usage was due to the apparent high location of the batteries from which the R/Ts received their power.

7. **Personnel**

The operator of the "BONNIE'S BOY RAY" does not hold a Fishing Master's certificate and is not required to by regulations. He has been fishing for 35 years including 15 years as operator. He has owned and operated the "BONNIE'S BOY RAY" for 9 years.

Findings

The "BONNIE'S BOY RAY" flooded due to an apparent ingress of water below the waterline and subsequently shipped water over the gunwales.

It would appear that:

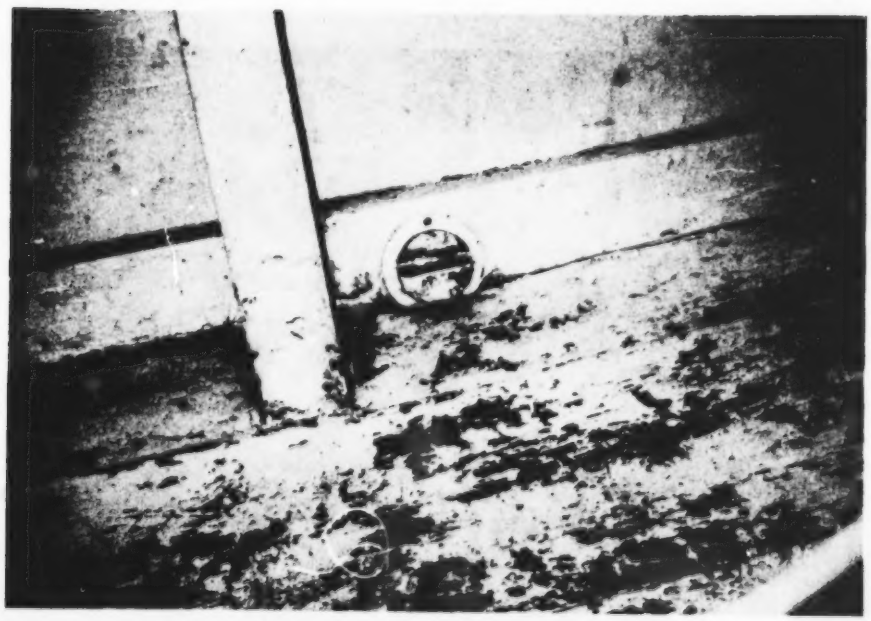
- the initial ingress was possibly at a through-hull fitting in the engine compartment. This fitting was found separated after the vessel had subsequently been pumped dry.

Other Findings

The rebroadcast of the distress call on VHF R/T channel 16, the international distress, safety, and calling frequency, was apparently not received by any ship/shore station.

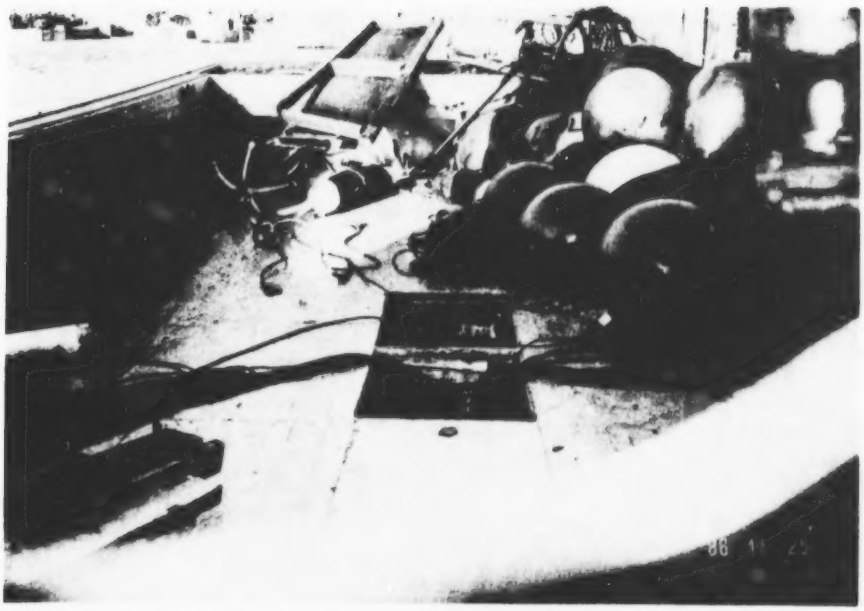
The vessel was successfully towed into a safe port.

"BONNIE'S BOY RAY"



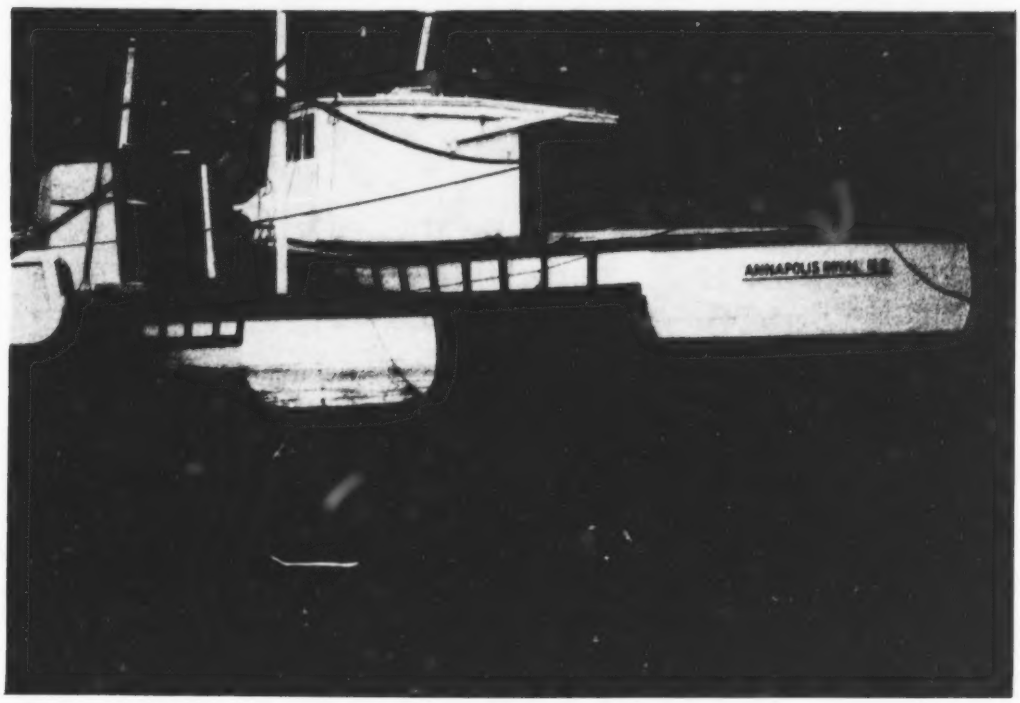
Scupper hole with brass plugs on
"BONNIE'S BOY RAY".

Dalot avec bouchons en laiton sur
"BONNIE'S BOY RAY".



Floats and open hatches on "BONNIE'S BOY RAY".

Flotteurs et écoutilles ouvertes sur "BONNIE'S BOY RAY".



Typical 'Cape Islander' design.
Note: The different sizes of the same design.

Conception typique 'Cape Islander'.
Nota: Les différentes grandeurs de la même conception.

Courtesy of Maritime Museum of the Atlantic

Photo: Collection Maritime Museum of the Atlantic

Chapter 3

General Analysis

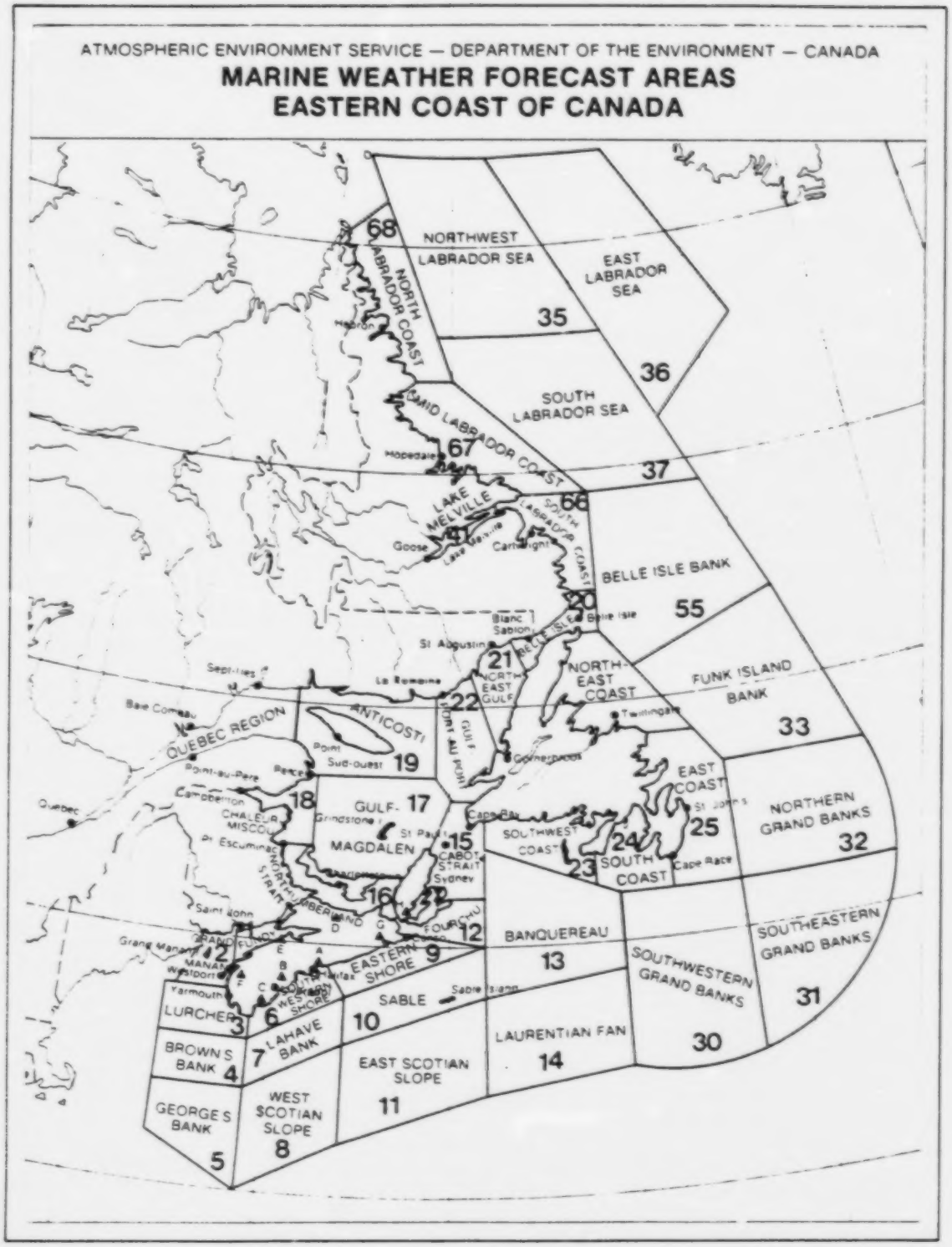
1. Lobster fishing

The open season in area 34 is from 0700 on the last Monday in November, which in 1986, was November 24, until 2400, May 31. During that time, each fishing vessel has a quota of 400 traps although there is no limit as to the weight of the catch. During the period November to March 31, 375 traps are permitted to be fished and thereafter until May 31, a further 25 traps. In the seasons prior to 1986/87, a number of lobster fishing vessels were known to have departed from various ports, within the regulatory lobster fishing area, as much as 6 hours before the official season opening. Consequently, on November 23, 1986, DFO officers were delegated to monitor the ports of area 34 to prevent such early departures. As a result of this monitoring, several vessel owners were, in fact, charged under the Atlantic Fisheries Regulations.

The 1986-87 season also saw the regulations relaxed to permit traps to be set and the catch to be recovered within the first 24-hour period; it was reported however, that none of the operators involved in these casualties intended to take advantage of this (relaxed regulation) new privilege.

Lobster fishing is a lucrative industry which promotes a strongly competitive attitude throughout the season but more so at the onset of a new season. This attitude induces the vessel operators to load their vessels to capacity with lobster traps and set sail for their favourite fishing spots as soon as the season opens.

It is not unusual for lobster vessels to leave port with their scuppers submerged and the operators apparently realize that they are taking chances by so overloading their vessels to maintain a livelihood. Hence the common practice of plugging the scuppers and, in some cases, removing one deck hatch to facilitate drainage to the bilge of any water shipped, from whence it is then pumped out. This 'system' has been successful for many years for the majority of vessel operators and casualties such as have occurred this year, do not seem to


ATMOSPHERIC ENVIRONMENT SERVICE — DEPARTMENT OF THE ENVIRONMENT — CANADA
MARINE WEATHER FORECAST AREAS
EASTERN COAST OF CANADA
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EAST LABRADOR SEA
SOUTH LABRADOR SEA
NORTH LABRADOR COAST
MID LABRADOR COAST
SOUTH LABRADOR COAST
LAKE MELVILLE
BELLE ISLE BANK
NORTH-EAST COAST
FUNK ISLAND BANK
NORTH EAST GULF
GULF
ANTICOSTI
QUEBEC REGION
GULF
MAGDALEN
CABOT STRAIT
SOUTHWEST COAST
SOUTH COAST
EAST COAST
NORTHERN GRAND BANKS
SOUTHEASTERN GRAND BANKS
SOUTHWESTERN GRAND BANKS
BANQUEREAU
LAURENTIAN FAN
EASTERN SHORE
SABLE
LAHAVE BANK
BROWNS BANK
LURCHER
GEORGES BANK
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EAST SCOTIAN SLOPE
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deter them. Of the 975 licensed lobster vessels in area 34, it was estimated that more than 75% ventured to sea November 24, 1986 and all were similarly heavily laden. It was learned that one unidentified vessel departed with 250 traps onboard but lost 80 en route.

Approximate figures indicate that a first day's catch can bring in anywhere from 820 to 1360 kg per vessel. This figure will decrease progressively each day if the same 'spot' is fished repeatedly but if the vessels venture further off-shore, a similar catch can possibly be made each day for approximately 2 weeks. Typical price for lobster paid to the fisherman at the commencement of the November 1986 season varied between $7.70 to $8.36 per kg.

2. **Weather**

The following marine weather forecasts were issued by Environment Canada for Lurcher and Grand Manan at:

> 0045, MONDAY, NOVEMBER 24, 1986
>
> Winds southeast 15 to 25 knots increasing to southerly 20 to 30 this morning then diminishing to westerly 10 to 20 this evening ...cloudy, rain and mist developing this morning then ending overnight reducing visibility to three quarters to 4.
>
> Synopsis - A frontal trough will move into the district by late today then move to the east of the district Tuesday afternoon. Winds will increase to strong to gale force southerly ahead of the front then shift to the northwest in its wake... Small craft are warned that winds of more than 20 knots are forecast for all coastal waters.

This above forecast and synopsis were transmitted by VAU at the scheduled forecast time of 0516 on SSB R/T, channel 75, 2598 kHz.

Note: Gale is defined as 'sustained winds of 34-47 knots'.

The same forecast was transmitted continuously from 0037 to 0602 on VHF R/T, channels 21 and 83B (CMB). The following sea state forecast issued at 1900, Sunday, November 23 was incorporated into the CMB and was

broadcast until 0433:

Forecast values are a combined wind, wave and swell height for the open sea. Users are cautioned that heights may differ significantly in coastal waters and in depths less than 50 metres.

Grand Manan and Lurcher. Seas near one metre tonight and near 2 metres Monday.

SEA STATE FORECAST ISSUED ...AT 0500, MONDAY, NOVEMBER 24, 1986.

Forecast values are a combined wind, wave and swell height for the open sea. Users are cautioned that heights may differ significantly in coastal waters and in depths less than 50 metres.

Grand Manan. Seas near 2 metres today and tonight.

Lurcher. Seas 2 metres building to 2 to 3 this afternoon and subsiding again to 2 metres tonight.

The above forecast was incorporated into the CMB commencing at 0433. It was also broadcast on SSB R/T at 0516.

GALE WARNING AT 0545, MONDAY, NOVEMBER 24, 1986.

A frontal trough from the west will move into the district this evening. Winds will increase to gale force ahead of the trough today. Further details follow in the next regular marine forecast.

0600, MONDAY, NOVEMBER 24, 1986

Gale warning issued. Winds southeast 15 to 25 knots increasing to southerly 25 to gales 35 this morning then diminishing to northwest winds 20 to 30 overnight...Rain and mist developing this morning then ending overnight reducing visibility to three quarters to 4.

Synopsis - A frontal trough from the west will

> move into the district this evening and will continue to move further east on Tuesday. Winds will increase to gale force southerly ahead of the front then shift to moderate to strong northwesterly in its wake.

The above forecast and synopsis were broadcast by VAU as a TTT at 0608 on SSB R/T, 2598 kHz and VHF R/T channels 21 and 83B and continuous thereafter on CMB. The TTT was rebroadcast on MF SSB at 0706 and was scheduled for further rebroadcast at 0900 and 1100 but these broadcasts were precluded by MAYDAY traffic which has priority over all communications.

A 0633 regular weather broadcast on MF was delayed until 0636 because of strong reception from other stations who were also broadcasting the gale warning.

A further weather report received at VAU at 0255 was issued by the National Weather Service at Portland, Maine:

> Coastal Marine Forecast issued at 0300, Monday, November 24, 1986. Small craft advisory in effect. Today, south to southwest winds 15 to 30 knots shifting to westerly in the afternoon. Average seas 3 to 6 feet. Rain ending from west to east. Visibility 1 to 3 miles in rain and fog, improving to over 5 miles with the windshift.

The above forecast was incorporated into the CMB at 0314.

It was reported by the operators of all 3 casualty vessels that the CMB had been monitored prior to their departure from their respective ports and that they were aware of the gale forecast.

In essence, the weather forecasts and gale warning had been received and broadcast by VAU on the appropriate frequencies and they had been monitored by the vessel operators prior to departure. The weather conditions experienced by the mariners were comparable to those forecasts.

3. **Stability**

Each of these vessels was of open construction, amongst other factors, and therefore was not required to comply

with an approved stability standard by regulations.

It has been stated that one of the casualty vessels sailed with the deck edge submerged and the other two had remarkably low freeboard. The operators of all three vessels indicated that in the past, they had put to sea under similar loaded conditions in comparable weather and had not experienced adverse effects.

The Cape Islander is a traditional design of fishing vessel on the Atlantic coast which has been in use for at least 80 years. It is estimated that there are some 3,000 of this type of vessel currently operating out of Nova Scotia. Since the origin of this design, changes that have taken place are primarily in the above-water lay-out. Very little change has been made to the underwater configuration. The overall beam has become wider in proportion to the length of the vessel, there is a greater sheer forward and the transom is wider. Although the modern day Cape Islander is recognized as a solid vessel, the absence of freeing ports creates a serious risk in the event of swamping. The vessel has an unusual deck configuration in that there is a low point of sheer on the afterdeck. The scuppers and deck hatches are generally located adjacent to this lower part to facilitate drainage from the deck.

During 1975-76, the New Brunswick Department of Fisheries commissioned a Company of Maritime Marine Consultants of St. John, N.B., to undertake an investigation into the stability characteristics of small fishing vessels within that province with a view to providing an initial assessment of the inshore fleet's current status relative to its service conditions.

Findings from this investigation on vessels of comparable characteristics to those included in this report, show that in general, when they are loaded with lobster traps, they have adequate initial transverse stability characteristics. However, due to their low freeboard, the range of statical stability is severely restricted and the vessels are highly susceptible to downflooding, which action would render the vessel unstable. Such appears to have been the case with the subject vessels.

4. <u>Electrolysis</u>

There is no positive evidence that initial ingress was at a through-hull fitting although recent investigation had revealed that the use of dissimilar metals had been

the practice during the construction of some fishing vessels and it was subsequently learned that a number of these vessels had discovered corrosion at the valves of these fittings.

When two dissimilar metals are submerged in salt water, an electric current will flow from the electro-positive or corroded metal towards the electro-negative or protected metal. The amount of corrosion or electrolytic action thus caused depends on the relative positions of the two metals in a galvanic series and on the exposed areas of the two metals. The further apart the metals are in the series, the more rapidly one will corrode while the other remains unchanged or even more protected.

Two of the subject vessels had through-hull fittings consisting of bronze and galvanized steel. As these two metals have a wide variance in the series, the galvanized steel would corrode readily.

The fitting of such dissimilar metals adjacent to each other is to be avoided. Where the use of dissimilar metals in the hull is unavoidable, reduction of general electrolytic action is achieved by the fitting of anodes or sacrificial plates in areas where such action is likely to occur.

The anodes are generally fitted to the hull and external fittings such as the propeller and rudder but many fishing vessels also fit internal anodes to protect the propeller shaft and salt water cooling systems. Two anodes are laid in the bilge at the stuffing box and a copper strap or wire attached to the anodes is led across the propeller shaft. In the engine compartment, an anode can be fitted inside the heat exchanger to prevent electrolysis to the dissimilar metals of the salt water cooling system. Such anodes were fitted to certain underwater and internal areas of the subject vessels.

5. Communications

(a) Radio Station licences

Being under 20 m in length, these fishing vessels were not required by regulations to carry a VHF set. Nevertheless, all vessels fitted with VHF, whether voluntary or otherwise, must have their VHF set licenced by the Minister of Communications under the Radio Act.

However, none of the VHF sets aboard these vessels were licensed.

(b) Radio operator's certificate requirements

Sections 78 and 88 of the General Radio Regulations Part II made pursuant to the Radio Act state in part:

> 78. The apparatus of all radio stations shall be worked only by operators holding a Canadian certificate of proficiency...
>
> 88. The holder of a Restricted Radiotelephone Operator's Certificate (Maritime) may act as a radiotelephone operator on ship station,...

In order to obtain an RROC, the candidate shall be required:

- To satisfy an examiner that he or she is capable of operating modern radiotelephone equipment.
- To satisfy an examiner that he or she possesses a general knowledge of radiotelephone operation procedures, international regulations applicable to radiotelephone communications between stations, and specifically those regulations relating to the safety of life.
- To satisfy an examiner that he or she possesses a general knowledge of the Radio Act and the regulations made thereunder.

Upon satisfactory completion of the examination, the RROC is issued to the candidate and is valid for the lifetime of the holder (it is not renewed or updated). There is presently no fee for the exam or certificate.

None of the operators held a Restricted Radiotelephone Operator's Certificate (Maritime) and the lack of procedural knowledge obvious in these cases can only enhance the importance of the mariner complying with that part of the Radio Act which requires all operators to hold such a licence.

(c) International distress safety and calling frequency

Whilst the monitoring of VHF channel 16 is mandatory for

vessels required by regulations to be equipped with a VHF set, vessels voluntarily equipped with it should, in the interest of safety, also endeavour to monitor this international distress safety and calling frequency.

The section on 'distress communication' contained in a DOC publication titled 'A guide for the radiotelephone operator', stresses the need for the use of VHF channel 16 for initiating the distress message and states in part:

> **Distress Communications**
>
> **Frequencies to be used**
>
> The first transmission of the distress call and message by a vessel should be on the distress, calling and answering frequency of 2182 kHz (MF) or Channel 16, 156.800 MHz (VHF). If no response is heard on these frequences, the use of any other available frequency in an effort to obtain assistance is permitted.

However, none of the three vessels in distress made their initial MAYDAY call on VHF R/T channel 16 but used a local channel for that purpose. Further, two of the three vessel's distress messages were neither received nor acknowledged by any other station and it is fortuitous that the passing of other fishing vessels in their vicinity resulted in saving their lives.

Abuse of VHF channel 16

Various stations reported their inability to transmit and/or receive on channel 16 due to the improper use of that channel by parties conversing with each other about everyday business. In order to educate the user of R/T sets, the DOC publication 'A guide to radiotelephone operator' emphasizes that once initial contact has been established on channel 16, both stations should switch over to a satisfactory mutual working channel with the exception of distress communication which is required to continue on channel 16.

(d) Use of prefix

In the interest of safety in order to establish priorities in communications, certain important messages are given the following prefix:

'MAYDAY' This distress signal has priority over all other communications and is to be used in life-threatening situations only. The use of this signal indicates that the station sending the signal is threatened by grave and imminent danger and requires immediate assistance.

'PAN PAN' This urgency signal has priority over all other communications except distress. It indicates that the station calling has a very urgent message to transmit concerning the safety of ship, aircraft or other vehicle; or the safety of a person.

'SÉCURITÉ' This safety signal has priority over other communications except distress and urgency. It indicates that the station calling is about to transmit a message concerning safety of navigation or giving important meteorological warnings.

The use of the prefix warns and alerts all listening stations that the message which follows requires full and immediate attention.

CHAPTER 4

General Findings

- The vessels sank due to an intake of water and subsequent downflooding.

- Two of the vessels were unable to weather the initial intake of water because they were deeply laden for the weather conditions forecast and experienced.

- The adverse weather forecast, which proved correct, was essentially ignored by the vessels' operators.

- An initial rich harvest of lobster at the opening of a new season induces, in most fishermen, a disregard for safety factors.

- Two of the vessels were of the type which habitually sail with limited freeboard, because of their design which facilitates retrieval of the traps.

- As this was the first day of a new season, the vessels were carrying more than a safe and practicable number of traps.

- Because of the limited freeboard of many of the lobster fishing vessels, including two of the subject vessels, the practice of plugging the scuppers and opening a deck hatch, which is considered necessary by the operators, is inherently dangerous.

- The distress messages on VHF R/T were not transmitted on the international distress safety and calling frequency of channel 16.

- There is local misuse of VHF R/T channel 16 to the point where it interferes with the proper use of that channel and which could jeopardize the success of a MAYDAY operation.

Other Findings

None of these three vessels was crewed with a person holding a Restricted Radiotelephone Operator's Certificate (Maritime) as required by the General Radio Regulations.

None of the VHF sets aboard the three vessels were licensed as required by the Radio Act.

The majority of the local fleet sailed on the opening day of the lobster fishing season and all but four were successful in setting their traps and returning safely to port.

OTTAWA, ONTARIO
JUNE 1987.

Glossary

CCGS	Canadian Coast Guard Ship
CGRS	Coast Guard Radio Station
CMB	continuous marine broadcast
DFO	Department of Fisheries and Oceans
Distress prefix	MAYDAY (q.v.)
EPIRB	Emergency position-indicating radio beacon. A transmitting device whose signal may be received by SAR vehicles or orbitting satellite, indicating the position of a craft in need of assistance.
Fathom	A nautical measure equal to 6 feet, 1.83 m.
Freeboard	The vertical distance measured on the side of vessel (amidships) from the waterline to the uppermost continuous deck.
Freeing port	A rectangular or oval opening in the bulwarks, close to the deck and fitted with a flap cover which opens outward to allow water shipped on deck to run freely overboard and does not allow the water to come aboard by way of the flap.
Free surface effect	The loss of effective stability due to a surface of liquid which is free to move.
Gunwale	The upper edge of a vessel's side.
kHz	kilohertz
L/s	litres per second

MAYDAY	International radio distress signal used by ships calling for help (m'aider).
MAYDAY RELAY	A distress message repeated by a station other than the station in distress.
MF	Medium frequency.
Painter	A line used for securing small vessels.
RCC	Rescue Co-ordination Centre
Scupper hole	A drain hole cut in the vessel's side at deck level to allow water to run directly overboard.
Sheer	The longitudinal curvature of the deck at side between stem and sternpost.
SIC	Steamship Inspection Certificate
SSB R/T	Single side band radiotelephone.
Stempost	The upright post of the bow.
Transom	The upperpart of the stern of a small vessel.
Trawl	A number of lobster pots, as governed by the individual fisherman, but anywhere from 10 to 25, secured by lanyards, 1 to 2 m long, to a bottom rope and spaced from 3 to 6 m apart. The ends of the bottom rope, known as the headline and footline, are anchored at one end and secured to a balloon float at the other.
TTT	The wireless telegraphy safety signal indicating that the station calling is about to

	transmit a message concerning the safety of navigation or giving an important meteorological warning. The R/T equivalent is the spoken word Sécurité. The safety signal has priority over all other communications except distress and urgency.
Urgency prefix	The spoken word PAN PAN repeated three times is used to prefix a message of an urgent nature. It has priority over all other communications except distress.
UTC	Co-ordinated Universal time.
VHF R/T	Very high frequency radiotelephone.

PART II

FISHING VESSELS NOT EXCEEDING FIFTEEN TONS, GROSS TONNAGE

Application

52. This Part applies to fishing vessels not exceeding 15 tons, gross tonnage, that are not sailing ships.

Life Saving Equipment, Lights and Signals

53. (1) In this section, ''approved'', when used in reference to an article, means that the article has been built in accordance with the standards therefor in the Life Saving Equipment Regulations and has been approved by the Board.

(2) Every fishing vessel not exceeding 12.2 m in length shall carry

(a) one approved life jacket for each person on board;

(b) one approved lifebuoy fitted with 27 m of line; and

(c) one watertight can containing six approved self-igniting flares.

(3) Every fishing vessel exceeding 12.2 m in length shall carry

(a) one approved life jacket for each person on board;

(b) a sufficient number of lifeboats, boats, dories, skiffs or seine skiffs to accommodate all persons on board the vessel; and

(c) one watertight can containing six approved self-igniting red flares.

(4) Every fishing vessel shall carry sufficient lights and equipment to comply with the Collision Regulations, and such lights shall be oil or electric.

ANNEX II

ATLANTIC FISHERY REGULATIONS 1985

APPENDICE II

RÈGLEMENT DE PÊCHE DE L'ATLANTIQUE DE 1985

Lobster

57. (1) Subject to subsection (4), no person shall
(a) fish for or have in his possession any lobster, or
(b) subject to section 58, operate a vessel with lobster traps on board in a Lobster Fishing Area set out in an item of Schedule XIV during the close time set out in that item.

Homard

57. (1) Sous réserve du paragraphe (4) il est interdit, dans une zone de pêche du homard visée à la colonne 1 de l'annexe XIV, pendant la période de fermeture établie à la colonne 11 de cette annexe.
a) de pêcher le homard ou d'avoir du homard en sa possession;
b) sous réserve de l'article 58, d'utiliser un bateau ayant à bord des casiers à homards.

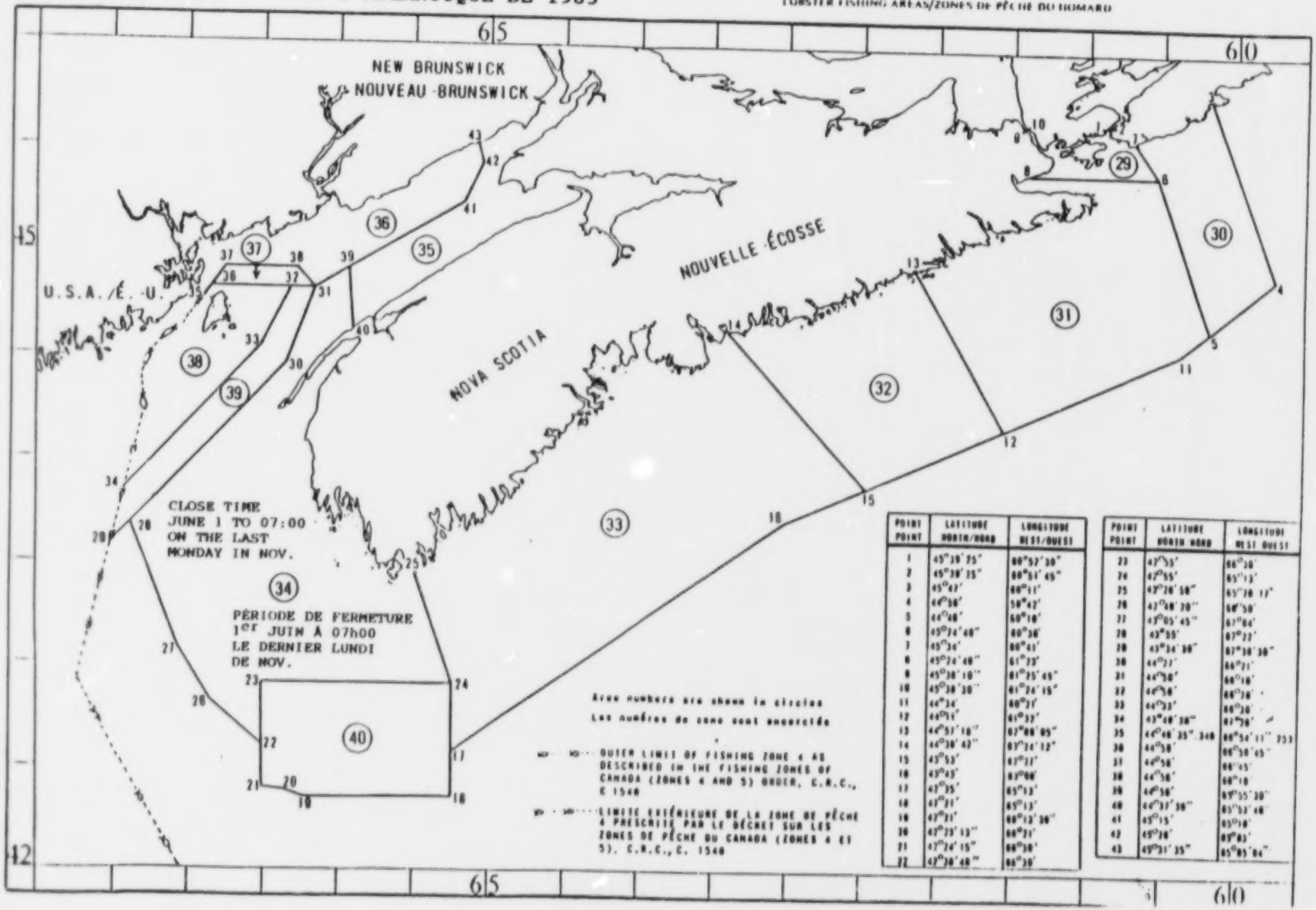
ANNEX II APPENDICE II

ATLANTIC FISHERY REGULATIONS 1985

RÈGLEMENT DE PÊCHE DE L'ATLANTIQUE DE 1985

PART V/PARTIE V

LOBSTER FISHING AREAS/ZONES DE PÊCHE DU HOMARD


NEW BRUNSWICK
NOUVEAU-BRUNSWICK
NOVA SCOTIA
NOUVELLE-ÉCOSSE
U.S.A./É.-U.
CLOSE TIME
JUNE 1 TO 07:00
ON THE LAST
MONDAY IN NOV.
PÉRIODE DE FERMETURE
1er JUIN À 07h00
LE DERNIER LUNDI
DE NOV.
Area numbers are shown in circles
Les numéros de zone sont encerclés
OUTER LIMIT OF FISHING ZONE 4 AS DESCRIBED IN THE FISHING ZONES OF CANADA (ZONES 4 AND 5) ORDER, C.R.C., C. 1548
LIMITE EXTÉRIEURE DE LA ZONE DE PÊCHE 4 PRESCRITE PAR LE DÉCRET SUR LES ZONES DE PÊCHE DU CANADA (ZONES 4 ET 5), C.R.C., C. 1548

POINT POINT	LATITUDE NORTH/NORD	LONGITUDE WEST/OUEST
1	45°28'25"	60°52'30"
2	45°28'25"	60°51'45"
3	45°43'	60°11'
4	44°58'	58°43'
5	44°48'	59°18'
6	45°24'48"	60°36'
7	45°24'	60°41'
8	45°24'48"	61°23'
9	45°28'10"	61°25'45"
10	45°28'20"	61°26'15"
11	44°34'	66°21'
12	44°51'	61°33'
13	44°53'18"	63°08'05"
14	44°38'42"	63°24'12"
15	43°53'	63°21'
16	43°43'	63°08'
17	43°35'	65°13'
18	43°31'	65°13'
19	43°31'	66°12'30"
20	43°23'13"	66°21'
21	43°24'15"	66°30'
22	43°28'48"	66°30'

POINT POINT	LATITUDE NORTH NORD	LONGITUDE WEST OUEST
23	43°55'	66°30'
24	43°55'	65°13'
25	43°28'58"	65°28'13"
26	43°48'20"	66°58'
27	43°05'45"	67°04'
28	43°55'	67°22'
29	43°34'30"	67°30'30"
30	44°22'	66°21'
31	44°58'	66°16'
32	44°58'	66°28'
33	44°33'	66°28'
34	43°48'30"	67°28'
35	44°48'35" 340	66°54'11" 353
36	44°58'	66°58'45"
37	44°58'	66°45'
38	44°58'	66°10'
39	44°58'	65°55'20"
40	44°33'30"	65°33'40"
41	45°15'	65°10'
42	45°28'	65°03'
43	45°31'35"	65°05'04"

ANNEX III

CANADA SHIPPING ACT

Life Saving Equipment Regulations

REGULATIONS RESPECTING LIFE SAVING EQUIPMENT

Short Title

1. These Regulations may be cited as the *Life Saving Equipment Regulations*.

SCHEDULE XI

(*s. 2*)

LIFE RAFTS

(3) Inflatable life rafts shall be tested annually in such manner as the Board may require and in accordance with Schedule XVII and shall carry a log card in an accessible position, signed by an approved person, certifying that such inspection has been properly carried out, and the date thereof, and showing the class of pack that is carried in the life raft.

APPENDICE III

LOI SUR LA MARINE MARCHANDE DU CANADA

Règlement sur l'équipement de sauvetage

RÈGLEMENT CONCERNANT L'ÉQUIPEMENT DE SAUVETAGE

Titre abrégé

1. Le présent règlement peut être cité sous le titre: *Règlement sur l'équipement de sauvetage*.

ANNEXE XI

(*art. 2*)

RADEAUX DE SAUVETAGE

(3) Les radeaux de sauvetage pneumatiques devront être éprouvés annuellement de la manière que pourra exiger le Bureau et conformément aux prescriptions de l'annexe XVII et porter, dans une position accessible, une fiche de bord signée par une personne autorisée, attestant que cette inspection a été dûment effectuée, donnant la date de cette inspection et indiquant la classe de la trousse de secours que porte le radeau de sauvetage.